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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,102	06/25/2004	Shigeru Ishizawa	255130US3PCT	2770

22850 7590 08/03/2007

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EXAMINER	
MOORE, KARLA A	

ART UNIT	PAPER NUMBER
1763	

NOTIFICATION DATE	DELIVERY MODE
08/03/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/500,102	ISHIZAWA ET AL.	
	Examiner	Art Unit	
	Karla Moore	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *22* is/are withdrawn from consideration.

5)☒ Claim(s) *1-9* is/are allowed.

6)☒ Claim(s) *10-18,20,21 and 23* is/are rejected.

7)☒ Claim(s) *19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,981,408 to Hughes.

3. Hughes et al. disclose a transfer mechanism for transferring an object to be processed, comprising: (a) a main transfer mechanism including: a casing (Figures 1-3 and 6-9, 30) for defining a transfer chamber under a vacuum state, the casing having a transfer port (at interface between lift beam assembly, 60 in uppermost position and processing chambers, S_i; column 7, rows 23-30); a guide rail (71) substantially horizontally installed in the transfer chamber; a moving body (75) movably installed on the guide rail; a horizontally driving unit (m7) for moving the moving body along the guide rail; an elevation supporting structure (multiple parts) including a holding body (81) for holding the object and a supporting member (43) for vertically movably connecting the holding body to the moving body; and an elevation mechanism (62) for raising and lowering the supporting member of the elevation supporting structure.

4. Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Publication No. 2001/0050224 A1 to Ishikawa et al.

5. Ishikawa et al. disclose a transfer mechanism for transferring an object to be processed, comprising: (a) a main transfer mechanism including: a casing (Figures 3-5, 14) for defining a transfer chamber under a vacuum state, the casing having a transfer port (18 a-c); a guide rail (31 a-c) substantially horizontally installed in the transfer chamber; a moving body (21) movably installed on the guide rail; a horizontally driving unit (33 a-c) for moving the moving body along the guide rail; an elevation supporting structure (Figure 4B, multiple parts) including a holding body (top horizontal part of 36 a-c) for holding the object and a supporting member (vertical part of 36 a-c) for vertically movably connecting the holding body to the moving body; and an elevation mechanism (71 a-c) for raising and lowering the supporting member of the elevation supporting structure.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 14-15,18, 20-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,981,408 to Hughes et al. in view of U.S. Patent No. U.S. Patent No. 5,417,537 to Miller.

8. Hughes et al. disclose a transfer mechanism for transferring an object to be processed substantially as claimed and comprising: (a) a main transfer mechanism including: a casing (Figures 1-3 and 6-9, 30) for defining a transfer chamber under a vacuum state, the casing having a transfer port (at interface between lift beam assembly, 60 in uppermost position and processing chambers, S_i; column 7, rows 23-30); a guide rail (71) substantially horizontally installed in the transfer chamber; a moving body (75) movably installed on the guide rail; a horizontally driving unit (m7) for moving the moving body along the guide rail; an elevation supporting structure (multiple parts) including a holding body (81) for holding the object and a supporting member (43) for vertically movably connecting the holding body to the moving body; and an elevation mechanism (62) for raising and lowering the supporting member of the elevation supporting structure.

9. However, a plurality of positioning sensors for detecting the position of the moving part, the position detecting sensor being disposed in a moving direction of the

moving part such that neighboring position detecting sensors are spaced from each other.

6. Miller teach providing a plurality of position detecting sensors for the purpose of detecting the position of a moving part, the position detecting sensors being disposed in a casing in a moving direction of the moving part such that neighboring position detecting sensors are spaced from each other (column 8, rows 10-14 and 22-24).

7. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a plurality of position detecting sensors in Hughes et al. in order to detect the position of the moving part, the position detecting sensors being disposed in the casing in a moving direction of the moving part such that neighboring position detecting sensors are spaced from each other as taught by Miller.

8. With respect to claim 15, see above description of Hughes et al.

9. With respect to claim 18, the elevation mechanism includes: a push rod (63) extending through the bottom of the casing and making a contact with the supporting member (via lift beam 60 and plate 61); a vertically driving unit (62) is disposed outside of the casing, for raising and lowering the push rod; and a sealing unit (bellows vacuum feedthrough; not illustrated). Also see column 7, rows 8-22.

10. With respect to claims 20-21 and 23, Miller also discloses providing the following features in/associated with a transfer mechanism for efficient transfer of objects: a horizontally driving unit having a linear motor mechanism including armature coils installed in the casing along the moving direction of the moving body and a field

magnet installed on the moving body; and a separation wall for airtightly separating the armature coil from the inside of the transfer chamber is installed in the casing. See Figures 1, 10 and 11. Also disclosed for efficient transfer are a magnetic levitation device for levitating the moving body from the guide rail (column 6, row 44 through column 7, row 4) and a partition wall for dividing the transfer chamber into and upper portion and a lower portion is installed in the casing, the holding body of the moving part is disposed in the upper portion of the transfer chamber while the moving body of the moving part is disposed in the lower portion of the transfer chamber; the partition wall has a slit for allowing the supporting member of the moving part to move therethrough; and the transfer mechanism further includes a gas supplying mechanism and gas exhausting mechanism. See Figures 10 and 11.

11. Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication No. 20010050224 to Ishikawa et al. in view of U.S. Patent No. U.S. Patent No. 5,417,537 to Miller.

12. Ishikawa et al. disclose a transfer mechanism for transferring an object to be processed substantially as claimed and comprising: (a) a main transfer mechanism including: a casing (Figures 3-5, 14) for defining a transfer chamber under a vacuum state, the casing having a transfer port (18 a-c); a guide rail (31 a-c) substantially horizontally installed in the transfer chamber; a moving body (21) movably installed on the guide rail; a horizontally driving unit (33 a-c) for moving the moving body along the guide rail; an elevation supporting structure (Figure 4B, multiple parts) including a

holding body (top horizontal part of 36 a-c) for holding the object and a supporting member (vertical part of 36 a-c) for vertically movably connecting the holding body to the moving body; and an elevation mechanism (71 a-c) for raising and lowering the supporting member of the elevation supporting structure.

13. However, Ishikawa et al. fail to teach the provision of a plurality of positioning sensors for detecting the position of the moving part, the position detecting sensor being disposed in a moving direction of the moving part such that neighboring position detecting sensors are spaced from each other.

14. Miller teach providing a plurality of position detecting sensors for the purpose of detecting the position of a moving part, the position detecting sensors being disposed in a casing in a moving direction of the moving part such that neighboring position detecting sensors are spaced from each other (column 8, rows 10-14 and 22-24).

15. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a plurality of position detecting sensors in Ishikawa et al. in order to detect the position of the moving part, the position detecting sensors being disposed in the casing in a moving direction of the moving part such that neighboring position detecting sensors are spaced from each other as taught by Miller.

16. With respect to claim 15, see above description of Ishikawa et al.

17. With respect to claim 16, Ishikawa et al. further disclose a horizontal transferring unit (38 and 39 a-c) for moving the object only in a horizontal direction through the transfer port is installed outside of the casing (at least partially, see Figure 4A); and the

elevation mechanism performs a positioning of the object held in the holding body to a height corresponding to the horizontal transferring unit.

18. With respect to claim 17, the moving body includes a stopper (41) for restricting the lowest position of the supporting member and moves (takes action) when the supporting member is at the lowest position thereof The

Allowable Subject Matter

19. Claims 1-9 and 11-13 are allowed

20. The following is an examiner's statement of reasons for allowance: Regarding claims 1-9, see previous office action. Regarding claims 11-13, the prior art of record fails to fairly teach or suggest a main transfer mechanism as claimed as part of a multi-chamber processing system that also comprises: an auxiliary transfer mechanism, a load lock mechanism, an entrance transfer mechanism, a cassette station, a plurality of individual transfer mechanisms and a plurality of processing apparatus all configured with respect to one another as recited. Further, no other properly combinable art was located that provided the missing teaching(s) along with the requisite motivation(s) for combination.

21. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. The following is a statement of reasons for the indication of allowable subject matter: See previous office action.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

23. Applicant's arguments, filed 4 May 2007, with respect to claims 11-13 have been fully considered and are persuasive. The rejection of these claims has been withdrawn.

24. Applicant's arguments with respect to claim10-18, 20-21 and 23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 571.272.1440. The examiner can normally be reached on Monday-Friday, 9:00 am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karla Moore
Patent Examiner
Art Unit 1763
30 July 2007